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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,123	02/27/2002	Hiroyoshi Komobuchi	5077-000088	5058

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EXAMINER	
HENN, TIMOTHY J	

ART UNIT	PAPER NUMBER
2622	

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,123	KOMOBUCHI ET AL.	
	Examiner	Art Unit	
	Timothy J. Henn	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12 and 13* is/are allowed.

6)☒ Claim(s) *1-5 and 7-11* is/are rejected.

7)☒ Claim(s) *6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5 and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiomi et al. (EP 1033868 A1) in view of Akiyama et al. (JP 02-078382).

[claim 1]

Regarding claim 1, Shiomi discloses a solid-state image pickup apparatus permitting parallel readout comprising an image pickup section partitioned into blocks (Figure 2, LEFT PICTURE PLANE and RIGHT PICTURE PLANE) and a readout amplifier for each block (Figure 2, Items 94 and 95), the apparatus further comprising: a system which reads out a reference signal generated from each of the blocks of the image pickup section via the readout amplifiers for correction of an output of the readout amplifier (Figure 3; Item 18; Paragraphs 0031-0048). However, Shiomi does not disclose generating a reference or "marker" signal using a marker signal source and marker signal generation section.

Akiyama discloses an image sensor including a reference signal source (Figure 1, Item 5), a marker signal generation section for generating marker signals having a same charge amount to be sent into two adjacent blocks of the image pickup section from the charge supplied form the marker signal source (Figure 1, Item 5; in order to be able to generate charges for both readout section 3 and 3' in Akiyama, a generating section must inherently be present in generating circuit 5 to create two separate charges). The system of Akiyama generates reference signals without requiring the user to be in the proximity of a completely white object. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a reference signal generating section to generate and output reference signal charges in the system of Shiomi to be able to calibrate the image sensor when the user is not in the proximity of a completely white object.

[claim 2]

Regarding claim 2, Akiyama discloses a marker charge storage portion for storing the charge supplied from the marker signal source (Figure 1, Item 6") and means for generating marker signals to be sent into two adjacent blocks of the image pickup section from the charge stored in the marker charge storage portion (Figure 1, The charges stored in the charge storage portion 6" are transferred to the image pickup sections 6 and 6').

[claim 3]

Regarding claim 3, Akiyama discloses a marker signal transfer portion for transferring the charge supplied from the marker source as a common marker signal

(Figure 1, Item 6") and a marker signal branch portion for sending the common marker signal transferred from the marker signal transfer portion into two adjacent blocks of the image pickup section (Figure 1, Intersection of Items 6, 6' and 6").

[claim 4]

Regarding claim 4, Shiomi discloses a horizontal CCD for each block coupled to the readout amplifier (Figure 2, Items 92 and 93). Akiyama discloses a vertical CCD between the marker signal generation section and a horizontal CCD section (Figure 1, Items 6 and 6').

[claim 5]

Regarding claim 5, Shiomi in view of Akiyama does not specifically disclose a marker signal generation section which is shaded from light. Official Notice is taken that it is notoriously well known in the image sensor art to shield all areas of the image sensor which are not intended to convert light into electric charge (i.e. non-photodiode locations) to prevent stray light from interfering with the image signal as it is being read-out. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to shade the marker signal generation section from light since it is not intended to convert light into electric charge.

[claim 7]

Regarding claim 7, to generate a marker signal charge, an input source in inherently required as claimed.

[claim 8]

Regarding claim 8, Akiyama discloses a marker signal transfer system which uses a horizontal CCD section for moving marker signal charges (Figure 1, Item 6''). The examiner notes that such a system would necessarily use a driving signal or "change of potential" as claimed to transfer the marker signal.

[claim 9]

Regarding claim 9, Akiyama discloses a marker signal generation section which includes a vertical CCD (Figure 1, Items 6 and 6') which is equal in width to a vertical CCD of the image pickup section (Figure 1).

[claim 10]

Regarding claim 10, Akiyama discloses recording the marker signal for each block and a correction circuit for correcting an image output of the readout amplifier according the stored marker signal (Figure 3, Item 18; Paragraphs 0066-0086; in order to perform digital operations on readout image data, the data must inherently be stored if only for a short period of time).

[claim 11]

Regarding claim 11, Akiyama discloses performing linear conversion of the image output for each segment (Figure 3).

Allowable Subject Matter

4. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

[claim 6]

Regarding claim 6, the prior art does not teach adding a plurality of marker signals each having a unit charge amount as claimed. While it is known in the prior art to add image signals in a VCCD to speed up readout and reduce image resolution, the addition of reference or "marker" signals is not taught or suggested.

5. Claims 12 and 13 are allowed.

[claims 12 and 13]

Regarding claims 12 and 13 the prior art does not teach or fairly suggest a method of driving a solid-state image pickup apparatus comprising the steps of generating marker signals for correction of outputs of readout amplifiers, reading the generated marker signals via the readout amplifiers for two adjacent blocks and generating another marker signal by adding a plurality of marker signals each have a unit charge amount as claimed. While it is known in the prior art to add image signals in a VCCD to speed up readout and reduce image resolution, the addition of reference or "marker" signals is not taught or suggested.

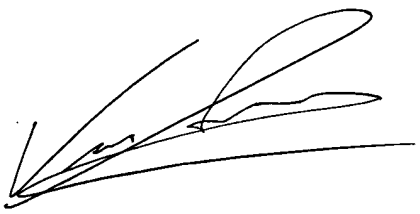
Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Henn whose telephone number is (571) 272-7310. The examiner can normally be reached on M-F 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TJH
10/13/2006



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